| Index  | of Clair | ms |                            | Appli | catio | on No.       | Applicant(s)  RUTHARDT ET AL. |          |  |  |  |  |
|--------|----------|----|----------------------------|-------|-------|--------------|-------------------------------|----------|--|--|--|--|
|        |          |    |                            | 09/84 | 14,27 | 73           |                               |          |  |  |  |  |
|        |          |    |                            | Exam  | iner  |              |                               | Art Unit |  |  |  |  |
|        |          |    |                            | Darre | en V  | V Gorman     | 3752                          |          |  |  |  |  |
| √ Reje | cted     |    | (Through nume<br>Cancelled | ral)  | N     | Non-Elected  | A                             | Appeal   |  |  |  |  |
| = Allo | ved      | ÷  | Restricted                 |       | -     | Interference | 0                             | Objected |  |  |  |  |

| Claim  |               |            |               |               |               |               |        | J             | L               |          |    |                    |          |              |         |         | J  | Ш               |   |          |     |                   |     |   |   |  |                    |              |                 | 1   |          |
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| 1  | Cla           | ∄IITTI     |               |               |               | Claim   Date  |        |               |                 |          |    |                    | 4        | Cla          | Date    |         |  |                 |   |          |     | ᅴ                 |     |   |   |  |                    |              |                 |   |          |
| 1  | l _           | क्         | 2             | 02            | ဗ             | ဗ္ဗ           | 4      | 4             |                 |          |    | l <u> </u>         | <u>~</u> |              |         |         |  | П               |   |          |     | _                 | 펼   |   |   |  |                    |              |                 | ıl  |          |
| 1  | ig.           | <u>.</u> j | 18/           | 12/           | 32            | ă             | 8      | 8             |                 |          |    | ia i               | <u>:</u> |              |         |         |  |                 |   |          |     | <u>e</u>          | Ϊġ  |   |   |  |                    |              |                 | ıl  |          |
| 1  | "             | ō          | 6             | 12            | 4/2           | 6             | -      | 9             |                 |          |    | L                  | ō        |              |         |         |  |                 |   |          |     | 4                 | ō   |   |   |  |                    |              |                 | ıl  |          |
| 2   2   3   3   7   0   7   0   0   0   1   103   103   104   105   106   106   106   106   106   106   106   106   106   107   10   | <b>-</b>      | ļ          | Ш             |               | -             | ļ.,           | ļ.,    |               | $\vdash$        | _        | 4  |                    |          | $\dashv$     | +       | +       | ┼-   | $\sqcup$        | $\dashv$  |          | 4   | $\vdash$          |     | _   |   | - -  | _                  | ļ            | ⊢               | $\dashv$  | _        |
| 2   3  | 1             |            | $\vdash$      | _             |               |               |        | =             | $\vdash$        | _        | 4  | <u> </u>           |          | $\vdash$     | _       | _       | ╄  | $\sqcup$        | 4   |          | ┨.  | $\vdash$          |     | $\dashv$  | _   |  |                    | ـــ          | ⊢               | $\dashv$  | _        |
| A  | <u> </u>      |            | -             | _             | _             | -             | -      | _             | $\vdash$        |          | 4  | $\vdash$           |          |              | +       | -       | ┼  |                 | 4   |          | 4   |                   |     |   | _   | +  | +                  | <b>├</b>     | ⊢               | $\vdash$  | 4        |
| S   S   N   N   N   N   S   S   S   S  | 2             |            | -             |               |               | _             |        | =             | $\vdash$        | _        | 4  |                    |          | $\vdash$     | -       |         | <del> </del>   | $\sqcup$        | _   | $\dashv$ | 4   |                   |     |   |   | _  | ┿                  |              | $\sqcup$        | $\longrightarrow$   | $\dashv$ |
| 8  | <u>-</u>      |            |               |               |               | _             |        | <u> </u>      | $\vdash$        | -        | 4  |                    |          | $\vdash$     | _       |         | ┼  | $\vdash$        |   | _        | -   |                   | 104 |   | _   | $\dashv$   | 4                  |              | $\vdash \vdash$ | $\rightarrow$   | $\dashv$ |
| 10   |               |            | $\vdash$      | $\overline{}$ |               |               | _      | ⊢             | $\vdash$        |          | 4  |                    |          | -            | $\perp$ |         | ↓  | Щ               | _   |          | -   | $\longrightarrow$ | 105 | _   | _   | _  | ╄                  | _            | $\sqcup$        | $\dashv$  | _        |
| 12   8   |               |            | $\vdash$      |               | -             |               | _      |               | $\vdash$        |          | 4  |                    |          | $\sqcup$     |         | +       | ╁  | $\sqcup$        | _   | _        | 4   |                   |     | _   | -   |  | ╀                  | _            | Ш               |   | -        |
| 12   |               |            |               | $\overline{}$ | _             | _             |        | -             | $\vdash \vdash$ | _        | 4  | -                  |          | _            | _       | 4       | -  | Ш               | _   |          | 4   | $\vdash$          | 107 | _   | _   | _ _  | 4_                 | _            | Ш               |   | _        |
| 18   |               |            | $\vdash$      | $\overline{}$ |               |               |        |               | $\vdash \vdash$ | +        | 4  |                    |          | $\perp$      | $\perp$ | -       |  | Ш               | _   | _        | 4   | $\vdash$          |     | _   | _   |  | _                  | _            | Ш               |   | 4        |
| 19   |               |            | $\vdash$      | -             |               |               |        |               | $\sqcup$        | _ _      | 4  | <u> </u>           |          | $\sqcup$     | $\bot$  | $\bot$  | ↓  | $\sqcup$        | _   | $\bot$   | 1   |                   | 109 | _   | $\dashv$  | $\perp$  | 4                  | _            | Ш               |   | _        |
| 12   |               |            | $\vdash$      | $\overline{}$ |               |               |        | -             | $\sqcup$        | _        | 4  |                    |          |              | $\perp$ | $\bot$  | 1  | Щ               | _   |          | 1   | $\sqcup$          |     | 4   | $\dashv$  | $\perp$  | $\bot$             | ╙            | Ш               |   | _        |
| 3   13   |               |            | $\rightarrow$ |               |               |               |        |               | -               | -        | 4. |                    |          | $\dashv$     | -       | 4-      | +  | $\vdash \vdash$ | _   | $\bot$   | 1   | $\vdash$          | 111 | _   | $\dashv$  | $\perp$  | +-                 | <u> </u>     | $\sqcup$        |   | _        |
| 22   14  |               |            | -             |               |               |               |        | -             | $\vdash \vdash$ |          | ۱. | <b>—</b>           |          |              | $\perp$ | $\perp$ | 1  | $\sqcup$        | _   |          | 1   | $\sqcup$          |     |   | $\perp$   | $\perp$  | $\perp$            | $\vdash$     | Ш               | $\dashv$  | $\dashv$ |
| 13   15   + N   N   N   N   N   =  |               |            | $\rightarrow$ |               |               |               |        | $\overline{}$ | $\vdash$        | +        | 4  | <b></b>            |          | $\sqcup$     | -       | 4       | 4  | Ш               | _   | +        | 1   |                   |     | $\dashv$  | _   | 4  | 4                  | 1            | Ш               | $\dashv$  | $\dashv$ |
| 23   16  | 22            | 14         |               |               |               |               |        | -             | Щ.              | _        | 4  | <u> </u>           |          | $\sqcup$     | +       | -       | ↓  | $\vdash$        |   | 4        | 4   |                   | 114 | $\dashv$  | $\perp$   | $\perp$  | $\perp$            | <del> </del> | Ш               | $\dashv$  | $\dashv$ |
| 14   | 13            |            | _             |               |               |               |        | _             | $\vdash$        |          | 4  | <u> </u>           |          | $\sqcup$     | _       | _       | 1  | $\sqcup$        | _   | - -      | 4   | $\vdash \vdash$   | 115 | $\dashv$  | $\dashv$  | $\perp$  | $\perp$            | $\vdash$     | Ш               | $\dashv$  | _        |
| 24   |               |            |               |               |               |               |        | -             | $\vdash \vdash$ |          | 4  |                    |          |              | _       | _       | 1  | Ш               | _   |          | 4   | $\sqcup$          |     | _   | _   |  | $\perp$            | $\vdash$     | Ш               |   | _        |
| 15   |               |            | _             |               |               |               |        |               |                 |          | ١. |                    |          |              | _       |         | 4  | $\sqcup$        |   |          |     |                   | 117 | _   | 4   |  | ╄-                 | <u> </u>     | $\sqcup$        | _   | _        |
| 6   20   +   N   N   N   N   N   |               |            | -             | _             | $\overline{}$ | _             |        | -             | $\perp$         | _        | 4. |                    |          |              |         |         | <u> </u>   |                 | _   |          | Į   | $\sqcup$          |     | _   | $\perp$   | $\perp$  | $\perp$            | <u> </u>     | Ш               | $\dashv$  | _        |
| 9 21 + N N N N N N S N =   |               |            |               |               |               |               |        |               | $\perp$         |          | _  |                    |          |              |         | Щ.      | $\perp$  | Ц               | _   |          |     |                   | 119 | _   | 4   | $\perp$  | ╙                  |              | Ш               | $\dashv$  | _        |
| 16   |               | 20         |               |               |               |               |        | _             |                 |          |    |                    |          |              | $\perp$ |         | ↓_   | _               | _   |          | ]   |                   | 120 | _   | $\perp$   | $\bot$   | 1_                 | <u> </u>     | Ш               |   | _        |
| The color of the   |               |            | $\overline{}$ |               |               |               |        | -             | $\sqcup$        | _ _      | _  |                    |          |              | ᆜ       |         | <u> </u>   |                 | _   |          |     | $\sqcup \sqcup$   | 121 | _   | $\perp$   | $\bot$   |                    |              | Ш               |   | _        |
| 17   |               | 22         |               |               |               | -             |        |               | $\perp$         |          | _  |                    |          |              |         |         | _  | Ш               | _   |          |     | $\sqcup$          | 122 |   |   |  |                    |              | Ш               |   |          |
| 7         25         + N N N N N N N   =   |               | 23         | $\rightarrow$ | $\rightarrow$ |               |               |        | _             |                 |          | ╛  |                    |          |              | _       |         | ļ  |                 |   | _        | 1   |                   | 123 | _   | _   | $\perp$  | Д_                 |              | $\sqcup$        | _   | $\sqcup$ |
| 26   |               |            | $\rightarrow$ | $\rightarrow$ | $\overline{}$ |               |        |               | $\rightarrow$   |          | ╛  |                    |          |              | 4       |         | _  | Ш               | _   |          | Į   |                   |     |   |   | 丄  |                    | <u></u>      | $\sqcup$        |   |          |
| 4       27       + √ 0 0 √ 0 =       1         11       28 + 0 0 0 0 0 =       1         27       29 + √ 0 √ √ √ =       1         28       30 + √ 0 √ √ √ =       80         31       1       1         32       1       1         33       1       1         34       1       1         35       1       1         36       1       1         37       1       1         38       1       1         40       1       1         41       1       1         41       1       1         43       1       1         44       1       1         44       1       1         45       1       1         46       1       140         47       1       140         48       140       141         48       149       149   |               | 25         | _             |               |               |               |        |               |                 | _        | ╛  |                    |          | _            |         | 1       | _  |                 |   |          | ]   |                   | 125 |   |   | $\perp$  |                    |              | Ш               |   |          |
| 111       28       +       0   |               |            |               | $\rightarrow$ |               |               |        | $\overline{}$ | $\perp$         | -        | ╛  |                    |          | _            | $\perp$ |         | _  | $\Box$          |   |          |     |                   | 126 |   | _   | $\perp$  |                    | L            |                 | _   |          |
| 27       29       +       √       0       √       √       =       80       130       131       131       131       131       131       132       132       132       132       133       <   |               |            | -             |               |               |               |        |               |                 | $\perp$  | _  |                    |          | _            |         |         | $\perp$  | $\Box$          |   |          |     |                   | 127 |   |   |  | _                  | Ц.           |                 |   |          |
| 28       30       +       √       0       √       √       =       80       130       131       131       132       132       132       133       133       134       134       133       134       134       135       135       136       135       136       136       137       136       136       137       137       136       137       137       136       137       137       137       137       137       138       138       138       139       139       140       141       141       141       141       142       142       142       143       144       144       145       145       145       146       146       146       146       146       147       148       149       <   |               |            | +             | $\rightarrow$ | $\overline{}$ | $\overline{}$ |        | -             |                 |          |    |                    |          | _            |         |         | 1  |                 | _   |          |     |                   | 128 | _   |   |  |                    |              | Ш               |   | Ц        |
| 31       81       131       132       132       132       133       133       133       133       133       133       133       133       133       133       133       133       134       134       134       134       134       135       136       135       136       135       136       136       137       137       137       137       137       137       137       137       137       137       137       137       138       138       139       139       139       139       139       140       140       141       141       141       141       141       142       142       142       142       143       144       145       146       146       147       148       149       149       149       149       149       149       149       149       149       149       149       149       149       149       149       149  |               |            | +             | $\rightarrow$ | _             |               |        | $\rightarrow$ | $\perp$         |          | _  |                    |          |              |         |         | ┸  |                 |   |          |     |                   | 129 |   | $\perp$   |  |                    |              | Ш               |   | Ш        |
| 32       82       132       133         33       83       133       134         35       86       85       135       136         37       88       87       137       136       137         38       88       88       138       138       137       137       137       137       137       138       138       139       139       140       140       140       140       141       141       141       142       142       142       143       144       144       144       144       144       144       145       146       147       146       147       148       149   | 28            |            | +             | 1             | 0             | <b>√</b>      | 1      | Ξ             |                 | $\perp$  | _  | L                  |          | _            |         |         | $\perp$  |                 | _   |          | ]   | $\sqcup$          | 130 | _   |   | $\perp$  | <u> </u>           |              | Ш               |   |          |
| 33       34       35       36       35       36       37       38       37       38       39 <td< td=""><td><u></u></td><td>31</td><td>_</td><td>_</td><td>_</td><td></td><td></td><td></td><td><math>\perp</math></td><td></td><td>_</td><td></td><td></td><td></td><td></td><td><math>\perp</math></td><td></td><td></td><td></td><td></td><td></td><td></td><td>131</td><td></td><td><math>\perp</math></td><td><math>\perp</math></td><td>↓_</td><td><u> </u></td><td>Ш</td><td><math>\perp</math></td><td></td></td<>  | <u></u>       | 31         | _             | _             | _             |               |        |               | $\perp$         |          | _  |                    |          |              |         | $\perp$ |  |                 |   |          |     |                   | 131 |   | $\perp$   | $\perp$  | ↓_                 | <u> </u>     | Ш               | $\perp$   |          |
| 34   | L             |            |               |               |               |               | Щ      |               |                 | Ц.       |    |                    |          |              | $\perp$ | $\perp$ |  |                 |   | $\perp$  |     |                   |     |   |   | $\perp$  |                    |              |                 |   |          |
| 35     85       36     135       37     136       38     87       38     137       38     88       39     90       41     91       42     92       43     93       44     94       45     95       46     96       47     98       48     99       49     149  | $\sqsubseteq$ |            | $\Box$        |               |               |               | Ш      |               |                 | $\perp$  | _  |                    |          | _            | $\perp$ | $\bot$  | $oldsymbol{oldsymbol{oldsymbol{eta}}}$   |                 | _   | $\perp$  |     |                   | 133 |   | $\perp$   | 1  |                    |              | Ш               | $\perp \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \!$  | $\Box$   |
| 36       37       38       37       38       38       39       38       39 <td< td=""><td>L</td><td></td><td>_</td><td>_</td><td></td><td></td><td>Ш</td><td><math>\sqcup</math></td><td></td><td></td><td>4</td><td><math>\sqcup</math></td><td></td><td></td><td></td><td>_</td><td><math>oldsymbol{ol}}}}}}}}}}}}}}}}}}</math></td><td><math>\sqcup</math></td><td>_</td><td></td><td>   </td><td></td><td>134</td><td><math>\perp</math></td><td>_</td><td>_</td><td><math>oldsymbol{\perp}</math></td><td>Ш</td><td>Ц</td><td>ightharpoons</td><td></td></td<> | L             |            | _             | _             |               |               | Ш      | $\sqcup$      |                 |          | 4  | $\sqcup$           |          |              |         | _       | $oldsymbol{ol}}}}}}}}}}}}}}}}}}$ | $\sqcup$        | _   |          |     |                   | 134 | $\perp$   | _   | _  | $oldsymbol{\perp}$ | Ш            | Ц               | ightharpoons  |          |
| 37       87       137         38       88       138         39       90       140         41       91       141         42       92       142         43       93       143         44       94       144         45       95       145         46       96       146         47       98       148         49       99       149  |               |            | _             | $\downarrow$  |               |               |        |               |                 |          | 1  |                    |          | $\perp$      | $\perp$ |         |  | $\Box$          | _   |          |     |                   |     | _   |   | $\perp$  | $\perp$            |              | Ш               | ightharpoonup   |          |
| 38       39       138       139       139       139       139       139       140       140       140       140       140       141       141       141       141       141       141       142       142       142       143       144       144       144       144       144       144       144       144       145       146       146       146       147       148       148       148       148       149  | $\perp \perp$ |            |               |               | ļ             |               | Ш      |               | $\perp$         | $\perp$  | 1  | $\Box$             |          | $\perp$      | $\perp$ | $\perp$ | $\perp$  | $\Box$          |   |          | Į   |                   | 136 | $\perp$   |   |  | $\perp$            |              |                 | $oldsymbol{ol}}}}}}}}}}}}}}}$ | $\Box$   |
| 39       89       139         40       90       140         41       91       141         42       92       142         43       93       143         44       94       144         45       95       145         46       96       146         47       97       147         48       98       148         49       99       149  | igsquare      |            | $\Box$        |               |               |               |        |               | $\perp$         |          | 1  | $\square$          |          |              | $\perp$ | 4_      | $\perp$  |                 |   |          |     |                   |     |   |   |  | ļ                  |              | $\Box$          | $\perp$   |          |
| 40       90       140         41       91       141         42       92       142         43       93       143         44       94       144         45       95       145         46       96       146         47       97       147         48       98       148         49       99       149  |               |            |               |               |               |               |        |               | $\perp$         |          | 1  | $\Box$             |          |              |         |         | oxdot  |                 |   |          |     |                   |     |   |   |  |                    |              | $\Box$          | $\Box$  |          |
| 41     91       42     92       43     93       44     94       45     95       46     96       47     97       48     98       49     149       141     142       143     144       144     144       145     146       147     147       148     148       149     149   | $\sqcup$      |            | _             | _             |               |               |        |               | $\perp$         |          | _  | $\Box$             |          |              |         |         | $oxed{oxed}$   |                 |   |          |     | $oxed{oxed}$      |     |   |   | $\perp$  |                    |              |                 | $\Box$  |          |
| 42     92       43     93       44     94       45     95       46     96       47     97       48     98       49     149       142     143       143     144       144     145       145     146       147     147       148     148       149     149   | $oxed{oxed}$  |            |               |               |               |               |        |               |                 | _ _      | ]  |                    |          |              |         |         | L  |                 |   |          |     |                   |     |   |   | $oldsymbol{ol}}}}}}}}}}}}}}$ |                    |              |                 |   |          |
| 43     93       44     94       45     95       46     96       47     97       48     98       49     148       49     99   | $oxed{oxed}$  |            | [             |               |               |               |        | [             |                 |          | 1  | oxdot              |          |              |         |         |  |                 |   |          |     |                   |     | $oldsymbol{ol}}}}}}}}}}}}}} $ | $oldsymbol{oldsymbol{oldsymbol{oldsymbol{I}}}$  |  | L                  |              |                 | $oldsymbol{ol}}}}}}}}}}}}}}}$ |          |
| 44     94       45     95       46     96       47     97       48     98       49     148   | لـــــا       |            |               |               |               |               |        |               |                 |          | 1  | $\bigsqcup$        |          | $\perp$      |         |         |  |                 |   |          |     |                   |     | $\Box$  | $oxed{oxed}$  | $\perp$  |                    |              |                 | $\Box$  |          |
| 45     95       46     96       47     97       48     98       49     99  | <u> </u>      |            |               |               | _             | $\Box$        |        | _             |                 | <u> </u> | 1  | oxdot              |          | ot           |         |         |  |                 |   |          |     | $oxed{\Box}$      |     | $oxed{\bot}$  | $\perp$   |  | $oxed{\Box}$       |              |                 | $oxed{oxed}$  |          |
| 46     96       47     97       48     98       49     148   | igsquare      |            |               |               |               |               |        | [             |                 |          |    |                    |          |              |         |         | $oxed{\Box}$   |                 |   |          | [ ] |                   |     | $\Box$  |   | $oldsymbol{\perp}$   |                    |              | $\Box$          | $\prod$   |          |
| 47     97     147       48     98     148       49     99     149  |               |            |               |               |               | ]             |        |               |                 |          | 1  |                    |          |              |         |         | $\Box$   | $\Box$          | $oldsymbol{ol}}}}}}}}}}}}}} $ |          | ] [ |                   |     | $oldsymbol{oldsymbol{oldsymbol{oldsymbol{\Box}}}$   | $oldsymbol{oldsymbol{oldsymbol{oldsymbol{\Box}}}$   | $oldsymbol{\perp}$   |                    |              |                 | _]  |          |
| 48     98       49     148       149     149   | $oxed{oxed}$  |            |               | _[            | [             |               |        | [             |                 |          | 1  | $\coprod$          | 96       | $\Box$       |         |         |  |                 |   |          | [   |                   |     |   | $oldsymbol{oldsymbol{oldsymbol{oldsymbol{\Box}}}$   | $\perp$  | L                  |              |                 | $\Box$  |          |
| 49 99 149 149  | LI            |            | $\perp$       | _[            | i             |               |        | [             |                 |          | 1  | $\coprod$          |          |              |         |         |  | $\Box$          | $oxed{J}$   |          | ] [ |                   |     | I   | $oldsymbol{ol}}}}}}}}}}}}}} $ | I  |                    |              |                 | $oldsymbol{ol}}}}}}}}}}}}}}}$ |          |
|  |               |            |               | _[            | [             |               |        |               |                 |          | 1  | $oxedsymbol{oxed}$ |          |              |         | 丄       | Ш  |                 | $oxed{\Box}$  |          |     |                   |     | $oldsymbol{oldsymbol{oldsymbol{oldsymbol{I}}}$  | $oldsymbol{\bot}$   |  |                    |              |                 | $oldsymbol{ol}}}}}}}}}}}}}}}$ |          |
| 50   |               |            | $\Box$        | $\Box$        |               |               |        |               | $\Box$          |          | J  | $\Box$             | 99       | $oxed{oxed}$ |         |         |  |                 | $\Box$  |          |     |                   | 149 | $oldsymbol{\mathbb{I}}$   |   |  |                    |              |                 | $\Box$  |          |
|  |               | 50         |               |               | [             |               | $\Box$ | [             |                 |          | J  |                    | 100      |              |         |         |  | $\Box$          |   |          | ] [ | L                 | 150 | $\Box$  |   |  |                    |              |                 | $oldsymbol{ol}}}}}}}}}}}}}}}$ |          |